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## Health & wellness

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### Factors that may accelerate bone loss

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### Who is at risk of developing osteoporosis?

It is a fact of life that, as we grow older, our bones become thinner and weaker. In theory, therefore, we are all at risk of developing osteoporosis. Certain factors may accelerate this process, however, and it is important that we become aware of them.

### Menopause

Women are at greater risk of developing osteoporosis than men. Of course, this does not mean that every woman will get osteoporosis, simply that osteoporosis occurs with greater frequency in women.

After menopause, the ovaries stop producing the female hormone, estrogen. Estrogen is important for maintaining bone strength. Without estrogen, bone loses calcium, one of its most important components. If you have had a particularly early menopause (before age 45, for example), your bones will have lost the important benefits of estrogen much earlier than usual, and it is likely that you are at an increased risk of developing osteoporosis.

The amount of estrogen in your body may also decrease due to reasons other than menopause. If, for example, you have had a hysterectomy, and if your ovaries were removed, you are likely to have a very low estrogen level and your risk of osteoporosis may be higher than normal.

Women whose periods have stopped for a long time, for any reason other than pregnancy, may have weaker bones as a result of having a deficiency of estrogen during that time. If you are still having regular periods, your ovaries probably are producing enough estrogen.

### Smoking/Alcohol

We all know about the health risks associated with smoking and a high alcohol intake. In addition to all the other problems

**EXHIBIT D**

that they can cause, smoking and a regular high alcohol intake can also interfere with the body's ability to maintain normal, healthy bones.

Smoking speeds up the rate at which you lose bone, which makes you much more likely to suffer from osteoporosis.

### **Lack of exercise**

The strength of our bones is determined partly by the physical demands placed on the skeleton. Similar to the way in which our muscles weaken if they are not used, bones need a certain amount of exercise to stay strong and healthy. People who are confined to bed or a wheelchair, or who lead a particularly inactive lifestyle, have a higher risk of developing osteoporosis.

### **Diet**

We are what we eat! To a certain extent this is true, particularly with regard to the maintenance of healthy bones. An inadequate intake of calcium in the diet deprives the body of the raw materials it needs to maintain bone mass and strength. Anyone who is nutritionally deficient or who has a low dietary intake of calcium-rich foods, such as dairy products and fresh vegetables, may be at increased risk of developing osteoporosis.

In addition, as we grow older, the amount of calcium that our body needs changes. For example, a higher calcium intake is recommended for children, adolescents, women who are breast-feeding and postmenopausal women.

As we grow older, we should be more conscious about what we eat. This is because, as we age, the ability of our digestive system to absorb the important vitamins and minerals contained in the food that we eat is reduced. Therefore, it is often easy for older persons to become malnourished, even if they think that they are eating properly.

### **Family history**

If your mother or grandmother suffered from osteoporosis, then you are more likely to be at an increased risk of developing the disease. How can you find out if you have osteoporosis in your family? First, your relative may have been diagnosed with osteoporosis by a health care professional. Because osteoporosis may be present for many years without any obvious signs or symptoms, you may have relatives who have the disease but who are unaware of it. Alternatively, you may have a relative who has characteristic signs of osteoporosis, such as broken bones following minor trauma, a hunched back (dowager's hump) or height loss.

### **Medical history**

Some medical problems, for example, an overactive thyroid gland, liver disease or anorexia nervosa, can cause osteoporosis. In addition, certain medications, such as steroids, when used for a long time can have a detrimental effect on bones.

Steroids often are used in the long-term treatment of asthma and conditions like rheumatoid arthritis. If you have been taking steroids, you should discuss this with your physician.

### Previous fracture

A previous broken bone, particularly of the hip, wrist or spine, that has resulted from minor trauma may be an indication that your bones are already weak. If this is the case, the likelihood of breaking additional bones, or possibly the same bone, could be increased. Your health care professional will advise you on how to try to lower your chances of having more fractures.

### Low body weight

Women who are unusually slender may be at increased risk of osteoporosis. This is because their skeleton is small to begin with. Once the bones start to thin and weaken after the menopause, they will reach a stage at which they fracture more easily than the bones in women who have a normal build.

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